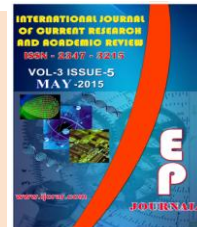




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Effect of social media on secondary school students acquisition of knowledge

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KEYWORDS

Secondary school students, acquisition of knowledge, social media

A B S T R A C T

The main purpose of the study was to determine the effect of social media on secondary school students' acquisition of knowledge. Specifically, the study sought to:(i) find the effect of social media learning strategy on senior secondary school students' achievement in Health science (ii) determine the effect of gender on the achievement of students in Health Science based on social media learning strategy. The study adopted a quasi experimental design. Two intact classes were used comprising of 112 students that registered for health science in NECO Examination. No sampling was done. Achievement test on health science was administered on the students after treatment. Both the validity and reliability of the test items were determined. The results of the analysis showed that there was a significant difference between the achievement of students exposed to social media and their counterparts that were not taught health science using social media in favour of those exposed to social media. Also, there was a significant difference between the achievement of male and female students in health science when exposed to social media in favour of the female students.

Introduction

Nigeria, as a developing country, is really emphasising the values of science and technology to improve its manpower requirements. The importance of science cannot be over-emphasised, most especially Health science among other sciences in the development of a nation's manpower (Eke, 1989). It is inconvertible to note that the physical fitness level of the labour, couple with the positive health attitudes, knowledge and practices are the qualifying factors for human effectiveness. Further, the secondary school educational objectives as contained

in the National Policy on Education (2004) are to prepare the students for useful and healthy living within the society and later cater for differences in talents and opportunities.

These objectives could be achieved by exposing the students to the study of Health Science contents, and thus equipping them to live effectively and serve best. Within the realms of sciences, Health science is highly recognized internationally as an important discipline, most especially, in the western

world (Fawol, 2007; Oshodin, 2004). Health science is a discipline of applied science deals with human and animal health. It involves the study, research, and knowledge of health and the application of that knowledge to improve health, cure diseases and understanding how humans and animal function (Ogunniyi and Yandila, 2004). Health Science Education has its root in the recognition by society that had changed from an agrarian society in United Kingdom to one dominated by a reliant, scientific and technological expertise. In 1851, the Great Exhibition in the United Kingdom brought the realization that this new society could only be sustained by ensuring that a body of people was educated in Health Science and Technology (Secondary Education Review, 2008).

In Nigeria, Health Science is included in the Senior Secondary School Curriculum as an examination subject at the West African School Certificate Examination and National Examination Council (WASCE/NECO) levels, to attract many talented young Nigerians to a career which provides the cornerstone for optimum effectiveness in a democratic society. It is significant to mention that in whatever function one finds oneself, the most important factor is food health. If health is lacking, productivity will be seriously undermined. Thus, every health education teacher in Nigeria has the potential for positively affecting the health status of students. Further, many students contend with health problems that influence their ability to learn. For instance, some students are not adequately fed, others lack relevant vaccination and are vulnerable to various infections and diseases such as tuberculosis, measles, meningitis, malaria and infective hepatitis. Studies by Iverson (2006) reveal that many students are brought up in families in which domestic violence and drug or chemical dependencies are the rule rather than the exception. These

observations compel and make necessary the provision and adequate implementation of health education curriculum in schools.

Health education instructional objectives are expected to provide health knowledge, enhance wellness behaviours, promote health situations, facilitate healthful relationships and enable students make responsible decisions. An earlier report (Bernard, 2002) on the objectives of health instruction include that it can help learners to develop resistance skills when appropriate, promote protective factors, ensure resilience in terms of the ability to prevent or to recover from sickness and to promote health literacy. Studies by Dawson (2008), Frankham (2007), and Gold (1999) reveal the significance of health instruction and they included that health instruction is effective in reducing many high-risk behaviours, teenage pregnancies, smoking rates among young people.

Health education in its various nomenclatures has been a part of the school curriculum in Nigeria since the early twenties. Today, health education curriculum has become a reality in Nigeria because of governments' concern for the health status of school children. The present national health education curriculum was developed by the Federal Ministry of Education between 1980 and 1984 and invariably approved for implementation in the nation's secondary schools in August 1985 (FME, 1995).

Studies by Owie (2002) revealed that the implementation of the approved health education curriculum in Nigerian Secondary schools was done under the nomenclature of 'Health Science'. This approach was adopted because it was alleged that the term 'education' in health curriculum should not be for the secondary school level, hence health science. The present health education

curriculum has ten instructional units, which are to be implemented by secondary schools in Nigeria – Growth and development; Food and nutrition; Physical health; Safety and accident prevention; Prevention and control of communicable disease; Community and environmental health; Family life and sex education; Emotional and social health; chemicals which alter behavior; consumer health (FME, 2004).

These ten units of the health education curriculum are theoretically and practically planned to address the physical, mental, emotional and social dimensions of the health of school children (Idehen and Oshodin, 2013). If the ten units are adequately implemented, they could motivate and assist students to maintain and improve their health, prevent disease and reduce health related risk behavior. Ideally, secondary schools in Nigeria are expected to implement the curriculum to the fullest. Udoh (2006) reported that Nigerian secondary schools have not lived up to the expectation in terms of implementing some aspects of the health education curriculum. The inability of Nigerian secondary schools to implement the health education curriculum may have been due to certain constraints. Further, Harves (2003) and Alfred (2003) reported that Health Science is unpopular among subjects in Senior Secondary Schools in Nigeria because no deliberate efforts or steps have been taken to promote it. In most Federal and State Colleges of Education, teachers are most trained specifically in Health Science. Also, students enrolment for Health Science has always been considerably low as about one out of every ten junior secondary school students registered in WAEC/NECO examinations (WAEC Reports, 2000-2009).

Preliminary analysis of the status of health education curriculum in Nigerian Secondary

Schools provided some baseline information on the range of constraints include lack of health education textbooks, poor quality of instruction execution of curriculum contents, inadequate funding, insufficient standard facilities and lack of coordinated programme implementation (influence of teachers on the choice of Health Science, Canbi (2009) claimed that the students are held practical sessions/lessons once in four weeks. Another noted that many schools lacked enabling Health Science facilities/equipment and applies coupled with adequate qualified and experienced personnel and non-motivational forces from the education. Graduate holders to cope with the stress and concept of regular practical session.

Inspite of the several researches that have been carried out to examine the issues and problems pertaining to health instruction in Nigerian Secondary Schools, none have attempted to address the role of social media in enhancing both enrolment and achievement of students in Health Science. Evidence emanating from Western Europe tends to suggest that social media has the potential of enhancing academic achievement of students (Bockcards and Casciahey, 2006) Kramastie and Rhizaradu, (2011) Evidence from literature also shows that social media increases the efficiency with which the learner approaches a learning task as well as the ability to develop a product, retain important information or perform a skill (Eze, 2003).

Social media is a form of interactive media by which users can communicate with each other through posts, contents, photos and videos (Ahigrist, Black, and Halonem, 2008). Social media is content make and share together. It is the collective of online communications channels dedicated to community-based input, interaction, content

sharing and collaboration (Kaphan and Hacniem, 2010). Social media, according to Kietzmann and Kristopher (2011) is the social interaction among people in which they create, share or exchange information and ideas in virtual communities and networks. Also, Morgan (2012) defined social media as a group of internet based applications that build on the ideological and technological foundations of web and that allow the creation and exchange of user generated contents. Further, social media depend on mobile and web based technologies to create highly interactive platform through which individuals and communities share, co-create, discuss, and modify user generated contents. They introduce substantial and pervasive changes to communication between organizations, communities, and individuals (Kietzmann and Kristopher, 2011).

Social media differ from traditional media in many ways, including quality, reach, frequency, usability, immediacy and performance (Graham, 2012). Social media is becoming an integral part of life online as social websites and applications proliferate. According to Reuters Institute Digital News Report (2013), social media is one of the most important ways for people find news online (the others being traditional brands and search engines). Just as television turned a nation of people who listened to media content into watchers of media content, the emergence of social media has created a nation of media content creators. As Eick and King (2012) reported, nearly 80% of American adults are online and nearly 60% of them use social networking sites. More Americans get their news through the internet than from newspaper or radio, as well as three-fourth who say they get news from e-mail or social media sites updates. Among the prominent social media in use include; facebook, Twitter, You-tube, and

Wikipedia. Facebook represents a potentially useful tool in educational contexts. It allows registered users to create profiles, upload photos and videos, and messages and keep in touch with friends, family and colleagues. Face book is reported to be the most popular social media in use worldwide (Sherer and Shea, 2011). It permits open dialogue and supports the integration of multimedia content such as student created photographs and videos to other texts in a plate form that many students are already familiar with. Further, it allows student to ask more mirror questions that they might not otherwise feel motivated to visit the teacher in person. It also allows the students to manage their own privacy setting. Face book is one alternative means for show students to be able to voice their thoughts in and outside of the classroom. It I allow students to collect their thoughts and inculcate them in writing before committing to their expression (Moddy, 2010). Further, the level of informality typical to facebook can also aid students in self expression and encourage more credent student and teacher and student – and student communication. Related to facebook is the twitter.

Twitter is a free micro blogging service that allows registered members to broadcast short posts caked tweets (Morgan and Graham, 2012). Twitter members can broadcast tweets and follow other users' tweets by using multiple platforms and devices. Twitter promotes social and intellectual connections among students. It can be used to enhance communication buildings and critical thinking and to extend classroom discussion.

You-Tube is another frequently used social media tool in the classroom. Students can watch videos, answer questions, and discuss content. Sherer and Sheal (2011) claimed that You-Tube increased students'

participation and productivity. You-Tube also improved students' digital skills and provided opportunity for peer learning and problem solving (Sherer and Shea (2011). Also, Eick and King (2012) reported that You-Tube videos keep students' attention, generated interest in the subject, and clarified course contents. Additionally, videos helped students' recall of information and visualize real world applications of course contents.

Notwithstanding the perceived roles of media as resented and highlighted above, the main source of providing knowledge to learners remains the teacher input. The conventional teaching – learning situation is essentially oral, group-based, classroom – based instruction where the teacher and the students are physically present at the same time and at the same place. The teacher is there in person imparting knowledge and skills to a group of learners. Communication is interpersonal and face-to-face. In this face-to-face classroom setting, the teacher plays an indispensable role (Mkpa, 2006). The teacher is very central and stands in front and at the centre of the class. He (the teacher) is very central in the educative process. According to Mkpa (2006), what the teacher knows and can do, make the difference in what the learners can learn.

Many writers have noted the importance of the teacher. Keegan (2009) asserts that there is no substitute for the teacher. According to Keegan, not even the teaching machines and computers can give the personal touch, the humanness, the socio-psychological atmosphere so fundamental to successful teaching and learning in the classroom. Thus, the teacher is indispensable in learning or knowledge based society. Jegede (2003) explained that the success of any educational programme depends ultimately on what goes on in the classroom. The

author (Jegede) further asserts that no matter what the executive of the supporting administrative arrangement in the form of teaching materials, supervisory and administrative manpower, relevance of syllabus, all will result to nothing unless the teacher in the classroom is sufficiently trained. Similarly, Adeyanju (2008) emphasize that the success of the educative process and consequently the educational system depend on level of teachers' training, effectiveness, dedication and motivation.

As already explained, there is universal agreement on the importance of teachers and teacher quality. However, what constitutes good teaching remains subject of debate. Teaching is a complex process and there is no one pattern of good teaching. As Aleyideino (2003) explained, good teaching involves a teacher helping learner (student) to acquire knowledge, information, ideas, concepts etc through a learning medium, thus constituting the teacher input process of teaching and learning.

Through teacher input learning process has been shown to be effective in enhancing students' requisition of knowledge, the evolving technologies in area of knowledge acquisition seems to but doubt on the effectiveness of the teacher input learning medium.

One such learning strategy which effect has not been adequately investigated and the use of social media as a teaching/learning strategy. The few studies on the effectiveness of social media learning strategy were conducted in Western Europe and their effects were tested on the other variables other than Health science achievement which are the variable of interest in this study. Therefore, there is need to investigate the effectiveness of social media learning strategy on

achievement of students in Health Science at senior secondary school level in Nigeria.

In adopting social media strategy as an instructional media, one observed factor that may influence the students' achievement is gender. While some studies showed evidence of females' superiority over males in some school subjects (Viadero, 2010, Coley, 2012), some studies reported that males achieved higher (Okeke, 2010, Ovute, 2012 among others). Following these inconsistencies, this study seeks to contribute in resolving this controversy on gender as it affects achievement in Health Science.

Statement of the problem

In spite of the relative importance of Health Science to the individuals, society and nation at large, students' achievement in the subject have been poor. Teachers, parents, curriculum experts and evaluators are worried, especially when the poor enrolment and achievement has been blamed on inadequate teaching and learning strategies. It is believed that if the achievement in Health Science of students in the senior secondary certificate examination remains as poor as this, it will affect both the economic and technological growth of Nigeria as achievement in health science is a sine-qua-non to acquiring health related knowledge and awareness. While books still remain a valuable tool for knowledge acquisition, the need to spend hours in the library has reduced as many students now have numerous options available for acquisition of information and knowledge.

Thus, students spend countless hours immersed in social media developing some skills and creating and sharing ideas and contents. Evidence emanating from West Europe tends to suggest that social media has the potential for helping to initiate and

sustain the interest of students and consequently improve their achievement in school subjects. How social media learning strategy would improve the Health Science achievement of Nigeria Students who operate in a different socio-cultural environment is yet to be determined. Therefore, the problem of this study put in a question form is: How would social media learning strategy improve the achievement of senior secondary students in Health Science?

Purpose of the study

The main purpose of the study is to determine the effect of social media and teacher input on senior secondary students' achievement in Health Science.

This study specifically seeks to:

1. Determine the effect of social media learning strategy on senior secondary school students' achievement in Health Science.
2. Determine the effect of teacher input learning strategy on senior secondary school students' achievement in Health Science.
3. Find out the influence of gender on the achievement of students in Health Science based on social media learning strategy.

Significance of the study

The significance of the study derives from the theoretical and practical basis of the findings of the study. This study has some theoretical significance for Bandura's social cognitive theory which is based on the fact that learning takes place in social interactions and that recall of information is dependent on the way information is

processed. In other words, the more information is completely processed, analyzed and connected with other information, the better the understanding and ability to recall.

The study will be relevance to students, teachers, authors, curriculum planners and researchers when the findings are published. To the students, the study will reveal whether or not social media can improve the achievement of students in health science.

This social media learning strategy could help students to construct meaning from texts to bear on what they read. When students see relationship between the use of social media and their achievement in Health Science, they will be motivated to learn.

When the teachers acquire the knowledge of social media as learning strategy, they may consider giving students lectures on social media learning strategy. Such an orientation programme will provide students with many learning skills that will make learners become independent.

The study findings may be of importance to textbook authors and curriculum planners. The impact of social media on the achievement of students in Health Science may be so important that textbook writers may include sufficient information on the strategy in the students' textbooks; any textbook with sufficient guide on the use of social media will be popular among students and their teachers.

To the researchers, the findings of this study will provide information upon which future researchers in the area of learning strategy will be based. The data from this study may improve teaching and learning of Health Science and improve students' knowledge acquisition in Health Science, thus enhance

their achievement in the school certificate examination.

Research questions

The following research questions will guide the study.

1. What is the mean achievement score of students in Health Science when exposed to social media strategy?
2. What is the mean achievement score of students in Health Science when exposed to teacher input?
3. What are the mean achievement scores of male and female students in Health Science when exposed to social media strategy?

Hypotheses

There is no significant difference between the mean achievement scores of male and female students in Health Science when exposed to social media strategy.

Methods

The study adopted a quasi experimental design. Two intact class groups were used, comprising of social media group (A) and Teacher input group (B).

The area of study was Igbo-Eze North local government of Enugu State. The area has both rural and urban settings within which the secondary schools used for the study were located. The population of the study comprised of all class three senior secondary school students (SS3) in the 2013/14 academic session who registered for the health science in the NECO examination. They were one hundred and twelve (112) students. All the 112 students that registered for health science in NECO were used for the study. No sampling was carried out. Achievement test on health science was

administered on the students after they had received treatment.

The achievement test was trial tested on a sample of thirty students, after when their scores were used to determine the reliability of the instrument using. The face validity of the instrument was also determined. The validated instrument was administered on the two groups of students after treatment. The social media group was exposed to gaining knowledge on health science through social media while the control group was taught by the classroom teacher only. The scores were analyzed using mean and t-test statistics and reported as shown in the results.

Results and Discussion

Research question one

What is the mean achievement score of students in Health Science when exposed to social media and teacher input respectively?

The results of table 1 show that the t-value of 10.7 was higher than the t-critical value (1.96) at 0.05 level of significance. This implies that there is a significant difference between the achievement of students exposed to social media and their counterparts that were taught health science using social media.

Research question two

What are the mean achievement scores of male and female students in Health Science when exposed to social media strategy?

Table 2 shows that the calculated t-value of 6.89 was higher than the critical t-value of 1.96. This result showed that there is a significant difference between the achievement of male and female students in health science when exposed to social media

strategy. The significant difference was in favour of the female students.

The study was carried out mainly to find out the effect of social media on students achievement in health science at secondary schools level in Nsukka Education Zone of Enugu State. The result of the study showed wide-gap in the achievement of secondary school students in health science when exposed to social media strategy. It was observed that significant difference exists between the achievement of students who were exposed to social media strategy and those students that received only teacher input. This is in line with Umoh (2004) who observed that social media has positive impact on both the performances and attitudes of students in language studies. It also corroborates with the finding of Ovute (2010) when it was observed that social media plays vital roles in research and students achievements in school subjects.

The result also showed a significant difference in the achievement of female and male students when exposed to social media in the course of teaching health science at secondary schools. No study, however, was located by the researcher to which the present finding either lead credence or, otherwise on the difference in achievement of male and female students in health science when exposed to social media.

Educational implication of the study

It is believed that some students that read health science at secondary school level will take a higher (further) course in Igbo at Colleges of education, Polytechnics or Universities. Hence, students at this level are future teachers or professionals in Igbo studies. Their ability to key into the social media will enhance their knowledge and exposure in health science as every subject is going technological.

The difference that exist between male and female students in health science when exposed to social media was expected because females have been reported in literature to outperform males in health science. The implication of this finding is that the social media will further help to widen the gap that exists between males and females in health science learning and achievement.

Conclusion

In line with the findings and observations made bring the study it was concluded:

1. Students’ achievement in the health science is enhanced using social media strategy.

2. There is significant difference in mean achievement in health science between the female and male students at secondary school level.

Recommendation

1. Teachers should use social media as a strategy in teaching health science at secondary school level.
2. Ministry of education (both Federal and States) should organize seminars, workshops through the school authorities on the values and use of social media in teaching subjects including health science.
3. Government should send practicing teachers on short-term trainings to update their knowledge in methods/strategies for teaching.

Table.1 Mean score and standard deviation score on Health Science when exposed to social media strategy and teacher input strategy

Subgroup	N	\bar{X}	SD	t_{cal}	t_{crit}
Social media Group	58	19.04	1.55	10.7	1.96
Teacher Input group	54	34.30	2.03		

Table.2 Mean score and standard deviation of male and female students when exposed to social media strategy

Subgroup	N	\bar{X}	SD	t_{cal}	t_{crit}
Female	62	24.4	3.75		
Male	50	17.1	2.65	6.89	1.96

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